

Table 1. Scoring of cognitive assessment with example

Cognitive Assessment⁵³	
1. Orientation (5 points)	a. 1 point given for each orientation question, including month, date, day, year, and time.
2. Immediate Memory (15 points): 5-item recall	a. Recite a list of 5 unrelated items. Ask the patient to repeat as many items back as they can remember, in any order. This should be completed 3 times in succession. One point awarded for each item in each trial.
3. Concentration (5 points)	a. Reverse digit recall: Recite a string of digits and ask the patient to repeat the string in reverse order. Start with a string of 3 numbers and increase by 1 digit in each trial. Complete 4 trials (up to a 6-digit sequence). One point is awarded for each correct reverse sequence. b. Months in reverse: Have the patient start from the current month and recite the names of the months in reverse order until they return to the starting month. One point is awarded for completing this task correctly.
4. Delayed recall (5 points)	a. Ask the patient repeat the previous list of 5 unrelated items.
5. Total score	a. Add total points from each of the sections.

I. Orientation

Month	0	1
Date	0	1
Day	0	1
Year	0	1
Time	0	1

Orientation score __/5

II. Immediate Memory

Apple	0	1	0	1	0	1
Car	0	1	0	1	0	1
Monkey	0	1	0	1	0	1
Ohio	0	1	0	1	0	1
Umbrella	0	1	0	1	0	1

Immediate Memory score __/15

III. Concentration

Digits backward

3-1-5	0	1
9-3-6-2	0	1
4-2-5-3-9	0	1
5-2-9-1-4-7	0	1

Reverse Months

Sep-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan-Dec-Nov-Oct	0	1
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Concentration score __/5

IV. Delayed Recall

Apple	0	1
Car	0	1
Monkey	0	1
Ohio	0	1
Umbrella	0	1

Delayed Recall score __/5

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Table 2. Recommended manual muscle, deep tendon reflex, and upper motor neuron testing

Muscle/action (predominant innervation)	Deep Tendon Reflexes (predominant innervation)
Shoulder shrug (CN XI) Deltoid (C5) Biceps (C5-6) Wrist extensors (C6-7) Grip (C8) Finger abduction (T1) Hip flexion (L2-3) Quadriceps (L3-4) Ankle dorsiflexors (L4-5) Ankle plantar flexors (L5-S1) Extensor Hallicus Longus (L5)	Biceps (C5-6) Brachioradialis (C5-6) Triceps (C6-7) Patellar (L2-4) Achilles (S1)
	*Upper Motor Neuron signs
	Finger Rolling Babinski Hoffman Pronator Drift *For upper motor neuron conditions, positive = abnormal finding

CN, cranial nerve.

Table 3. Assessment of postural control and motor coordination

Postural control/motor coordination	
Modified BESS test ^{38,44} : The subject is to try to maintain stability.	
<p>Each stance is performed on a firm surface with hands on the hips and eyes closed for 20 seconds</p> <ul style="list-style-type: none"> • Double leg • Single (nondominant) leg (hip flexed to 30 degrees and knee flexed to 45 degrees) • Tandem 	
<p>Errors are counted including:</p> <ul style="list-style-type: none"> • Hands lifted off iliac crest • Opening eyes • Step, stumble, or fall • Moving into >30 degrees hip abduction • Lifting forefoot or heel • Remaining out of test position >5 seconds 	
<ul style="list-style-type: none"> - NOTE: subjects unable to maintain the testing procedure for a minimum of 5 seconds are assigned the highest possible score (10) for that testing condition. - Abnormal response includes 5 or more errors during each 20-second trial. 	
Heel-to-Toe Tandem Gait ^{78,79}	
<p>The patient is asked to walk 10 feet with a heel-to-toe gait with eyes open. An abnormal test includes falling, grabbing an object, or moving excessively slow.</p>	
Finger-to-nose test	
<p>The examiner raises a finger in front of the patient and asks the patient to repeatedly alternate touching the finger, which is moved to positions in the various fields of vision and their own nose.</p>	

Table 4. Instructions for performing recommended ocular/ophthalmologic exam

Ocular/Ophthalmologic and Vestibular Evaluation with Selected Instructions	
Visual acuity	Wall or handheld Snellen chart
Gaze-holding nystagmus ¹¹ and Smooth pursuits ¹¹	<p>Check for nystagmus by examining the eyes in the 9 positions (Left, center, and right positions in upper, middle, and lower horizontal planes). The patient is then asked to track finger to 30 degrees of ocular motion in all planes of vision (smooth pursuits). Examiner observes for sustained nystagmus or loss of fixation. Abnormal nystagmus includes any loss of fixation at less than 30 degrees of ocular range in horizontal or vertical planes. Abnormal smooth pursuits include disconjugate vision, corrective (catch-up or back- up) saccades, loss of visual fixation, or increased symptoms (i.e. dizzy/nausea/headache).</p>
Accommodation/convergence ⁷⁷	<p>Hold a target object, such as a penlight, pencil, or a letter on a handheld Snellen chart (20/30 line) about 20 to 25 cm centered in front of the subject's eyes first individually and then together. The target is then moved toward the subject at a rate of about 1 to 2 cm/s. Record the distance at which blurring (single eye accommodation) or diplopia (near point of vergence) occurs. Normal is 6 to 10 cm.</p>
Saccades ¹¹	<p>The patient is asked to glance back and forth between 2 horizontal and then 2 vertical targets, such as 2 widely spaced index fingers. The velocity, accuracy, and conjugacy of the saccades should be noted. Normal individuals can immediately reach the target with a fast single movement or one small corrective saccade. Abnormal responses include delayed initiation of eye movement, slow velocity, or inaccurate movements including over/undershooting (hyper/hypometric motions) with greater than 2 refixation saccades. This may be accompanied by symptoms.</p>
Vestibulo-ocular reflex (VOR) head-impulse, head thrust, or Halmagyi test ¹¹	<p>To test the horizontal VOR, the examiner holds the patient's head between both hands, asks him to fixate on the examiner's nose, and rapidly and arbitrarily turns the patient's head horizontally to the left and then to the right. This rotation of the head in a healthy subject causes rapid compensatory eye movements in the opposite direction. The examiner observes for loss of fixation from his or her nose.</p>
Dynamic visual acuity ¹¹	<p>The examiner turns the subject's head horizontally to the right and left with a frequency of about 2 Hz and visual acuity is determined by Snellen chart. A decrease of baseline visual acuity by at least 3 lines is pathological</p>